CLAIMS

1. A process for producing an aliphatic polyester, comprising: subjecting a cyclic ester containing water in excess of 80 ppm as an initiator or/and a molecular weight-adjusting agent to ring-opening polymerization based on a total proton concentration in the cyclic ester as an index, and compounding a resultant aliphatic polyester with a carboxyl group-capping agent.

2. A production process according to Claim 1, wherein the carboxyl group-capping agent is selected from the group consisting of monocarbodiimides, polycarbodiimides, oxazolines, oxazines and epoxy compounds.

3. A production process according to Claim 1, wherein the carboxyl group-capping agent is a monocarbodiimide.

4. A production process according to any one of Claims 1 - 3, wherein a total proton concentration including more than 80 ppm of water is adjusted by adding water to a purified cyclic ester containing at most 60 ppm of water.

5. A production process according to any one of Claims 1 - 4, wherein the total proton concentration in the cyclic ester is calculated based on a total of hydroxycarboxylic acid compounds and water contained as impurities in the cyclic ester.

6. A production process according to Claim 5, wherein the hydroxycarboxylic acids comprise an α-hydroxycarboxylic acid and linear oligomer of α-hydroxycarboxylic acid.

7. A production process according to any one of Claims 1 - 6, wherein the total proton concentration in the cyclic ester is adjusted in a range of above 0.09 mol% and below 2.0 mol%.

8. A production process according to any one of Claims 1 - 7, wherein the cyclic ester comprises glycolide alone or a mixture of at least 60 wt.% of glycolide and at most 40 wt.% another cyclic monomer capable of ring-opening copolymerization with glycolide.

9. A production process according to any one of Claims 1 - 8, wherein the cyclic ester after adjusting the total proton concentration therein is melted under heating in the presence of a catalyst and then the molten cyclic ester is subjected to ring-opening polymerization to precipitate a resultant polymer.

10. A production process according to Claim 9, wherein the cyclic ester after adjusting the total proton concentration therein is melted under heating in the presence of a catalyst, then the molten cyclic ester is transferred to a polymerization apparatus equipped with a plurality of tubes, and the cyclic ester is subjected to ring-opening polymerization in an air-tight state within each tube.

11. A production process according to Claim 10, wherein the plurality of tubes comprise tubes having both ends that can be open and closed.

12. A production process according to Claim 9, wherein the cyclic ester after adjusting the total proton concentration therein is melted under heating in the presence of a catalyst in a melting vessel, then the molten cyclic ester is subjected to ring-opening polymerization in a reaction vessel equipped with a stirrer, and then a resultant polymer is once cooled to be solidified and subject to solid phase polymerization below the melting point of the polymer.